a single glass transition temperature, does not have any phase separation and is optically clear consisting essentially of:

a first monomer represented by the formula:

$$R(NCY)x$$

wherein R is a hydrocarbon or substituted hydrocarbon radical, Y is oxygen or sulfur and x is two or more;

a second polyene monomer wherein the polyene contains only vinyl functional groups; and

a third polythiol monomer.

117. The composition of claim 116 wherein Y is oxygen.

118. The composition of claim 117 wherein the polyene is represented by the formula:

$$[CH_2 = CR_1–CO–A–]_y \quad R_2$$

wherein R_1 is H or CH_3; A is oxygen, sulfur, or NH; R_2 is a polyvalent aliphatic, alicyclic or aromatic hydrocarbon residue, and y is 2-6.

119. The composition of claim 118 wherein the polyisocyanate monomer is an aromatic diisocyanate.

120. The composition of claim 119 wherein the polyene monomer is a tri, or tetraacrylate compound.

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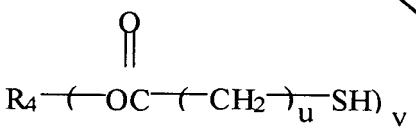
121. The composition of claim 120 wherein the polythiol monomer is selected from the group consisting of a compound represented by the formula:

$$HB{-}R3{-}(BH)z$$

wherein R_3 is an organic group consisting of polyvalent aliphatic or alicyclic and aromatic hydrocarbon, z is an integer of 1 to 3, and B is S; and



wherein R_4 is a substituted or unsubstituted aliphatic polyhydric alcohol residue, u is an integer of 1 or 2, and v is an integer of 2 to 4.

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122. The composition of claim 121 wherein the polyisocyanate is m-xylylene diisocyanate, the polyene is pentaerythritol tetraacrylate, and the polythiol is selected from the group consisting of pentaerythritol tetrakis(2-mercaptoacetate), 1,2-ethanedithiol and mixtures thereof.

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123. The composition of claim 121 wherein the polyene is triallyl-1,3, 5-triazine-2,4,6(1H, 3H, 5H)-trione.

124. A process for making homogeneous terpolymer resins which terpolymers have a single glass transition temperature, do not have any phase separation and which are optically clear comprising reacting at an elevated temperature a curable composition consisting essentially of the composition of claim 116.

125. The process of claim 124 wherein the monomers are admixed under non-reactive conditions.

126. The process of claim 124 wherein the monomers are admixed at a temperature of room temperature or below.

127. The process of claim 126 wherein an initiator and a reaction catalyst are added to the composition.

128. The process of claim 127 wherein the initiator is 1,1'-azobis(cyclohexanecarbonitrile) and a reaction catalyst is dibutyltindilaurate or tributylamine.

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129. The process of claim 124 wherein the composition is cured by heating the omposition to a first temperature of about 0° to 60°C, then heating the composition gradually to a second temperature of about 100 to 150°C over a period of about 1 to 32 hours, maintaining the composition at the second temperature for about 4 to

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32 hours, then cooling the composition to a third temperature of about 20 to 40°C over a period of about 1 to 32 hours.

130. The composition of claim 116 wherein photochromic materials are used to provide a tinted optical product.

131. The composition of claim 130 wherein the photochromic materials are naphthopyran compounds, spiro compounds or indoline compounds.

132. A terpolymer product made by polymerizing the composition of claim 116.

133. A polymer product made by polymerizing the composition of claim 121.

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134. A curable monomer composition for making a linear homogeneous terpolymer which terpolymer has a single glass transition temperature, does not have any phase separation and which is optically clear consisting essentially of the composition of claim 116 and which solution polymerized or bulk polymerized at an elevated temperature.

135. A linear terpolymer product made by polymerizing the composition of claim 134. - -.